CLAIMS

1. For use in connection with a remote method invocation system, a stub retrieval and loading subsystem for controlling the retrieval and loading of a stub for a remote method into an execution environment to facilitate invocation of the remote method by a program executing in said execution environment, the stub retrieval subsystem comprising:

A.   a stub retriever for initiating a retrieval of said stub; and

B.   a stub loader for, when said stub is received by said stub retriever, loading said stub into said execution environment, thereby to make the stub available for use in remote invocation of said remote method.

2. A stub retrieval and loading subsystem as defined in claim 1 further including a remote method reference detector for detecting whether a remote method reference has been received in said execution environment, the stub retriever initiating retrieval of said stub when the remote method reference detector detects that a remote method reference has been received in said execution environment.

3. A stub retrieval and loading subsystem as defined in claim 1 further including a remote method invocation control for controlling invocation of said remote method, said stub retriever initiating retrieval of said stub when the remote method is invoked.

4. A stub retrieval and loading subsystem as defined in claim 1, the remote method invocation system further including a server for processing said remote method in response to a processing request

3   therefor, the server further providing said stub in response to a retrieval request from said stub

4   retriever.

1   5. A stub retrieval and loading subsystem as defined in claim 4 in which server provides a separate

2   address space for processing said remote method from an address space provided by said execution

3   environment.

6. A stub retrieval and loading subsystem as defined in claim 5 in which the address space provided

by said server and the address space provided by said execution environment are provided by separate

computers.

7. A stub retrieval and loading subsystem as defined in claim 4, further comprising a remote server

identifier for providing a server identification for identifying said server.

1   8. A stub retrieval and loading subsystem as defined in claim 7 further including a remote method

2   reference detector for detecting whether a remote method reference has been received in said

3   execution environment, the remote method reference including a remote method server identifier, the

4   remote server identifier using the remote method server identifier as the server identification.

1   9. A stub retrieval and loading subsystem as defined in claim 7 further including a remote method

2   invocation control for providing a remote method invocation identification for controlling invocation

3   of said remote method, the remote method invocation providing a remote method server identifier,

4   the remote server identifier using the remote method server identifier as the server identification.

1   10. A stub retrieval and loading subsystem as defined in claim 7, the remote method invocation

2   system further including a nameserver for providing a said server identification, said remote server

3   identifier initiating communication with said nameserver to obtain the server identification for said

4   remote method.

1   11. For use in connection with a remote method invocation method, a stub retrieval and loading

2   method for facilitating the retrieval and loading of a stub for a remote method into an execution

3   environment to facilitate invocation of the remote method by a program executing in said execution

4   environment, the stub retrieval method comprising the steps of:

5   A.   a stub retrieval step for initiating a retrieval of said stub; and

6   B.   a stub loading step for, when said stub is received, loading said stub into said execution

7   environment, thereby to make the stub available for use in remote invocation of said remote

8   method.

1   12. A stub retrieval and loading method as defined in claim 11 further including a remote method

2   reference detection step for detecting whether a remote method reference has been received in said

3   execution environment, the stub retrieval step including the step of initiating retrieval of said stub

4   when a remote method reference has been received in said execution environment.

1   13. A stub retrieval and loading method as defined in claim 11 further including a remote method

2   invocation control step for controlling invocation of said remote method, said stub retrieval step

3   including the step of initiating retrieval of said stub when the remote method is invoked.

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14. A stub retrieval and loading method as defined in claim 11, the remote method invocation system further including a server for processing said remote method in response to a processing request therefor, the server further providing said stub in response to a retrieval request from said stub retriever.

15. A stub retrieval and loading method as defined in claim 14 in which server provides a separate address space for processing said remote method from an address space provided by said execution environment.

16. A stub retrieval and loading method as defined in claim 15 in which the address space provided by said server and the address space provided by said execution environment are provided by separate computers.

17. A stub retrieval and loading method as defined in claim 14, further comprising a remote server identification step for providing a server identification for identifying said server.

18. A stub retrieval and loading method as defined in claim 17 further including a remote method reference detection step for detecting whether a remote method reference has been received in said execution environment, the remote method reference including a remote method server identifier, the remote method server identifier being used during the remote method reference detection step as the server identification.

1   19. A stub retrieval and loading method as defined in claim 17 further including a remote method

2   invocation control step for providing a remote method invocation identification for controlling

3   invocation of said remote method, the remote method invocation providing a remote method server

4   identifier, the remote method server identifier being used during the remote method reference

5   detection step as the server identification.

1   20. A stub retrieval and loading subsystem as defined in claim 17, the remote method invocation

2   system further including a nameserver for providing a said server identification, said remote server

3   identifier initiating communication with said nameserver to obtain the server identification for said

4   remote method.

1   21. For use in connection with a remote method invocation system, a stub retrieval and loading

2   computer program product for controlling a computer to, in turn, control the retrieval and loading

3   of a stub for a remote method into an execution environment to facilitate invocation of the remote

4   method by a program executing in said execution environment, the stub retrieval computer program

5   product comprising a computer-readable medium having encoded thereon:

6   A.   stub retriever code devices to enable said computer to initiate a retrieval of said stub; and

7   B.   a stub loader code devices to enable said computer to, when said stub is received, loading said

8   stub into said execution environment, thereby to make the stub available for use in remote

9   invocation of said remote method.

1   22. A stub retrieval and loading computer program product as defined in claim 21 further including

2   remote method reference detector code devices for enabling said computer to detect whether a

3   remote method reference has been received in said execution environment, the stub retriever code

4   devices enabling said computer to initiate retrieval of said stub when the remote method reference

5   detector code devices enable said computer to detect that a remote method reference has been

6   received in said execution environment.

1   23. A stub retrieval and loading computer program product as defined in claim 21 further including

2   remote method invocation control code devices for enabling said computer to control invocation of

3   said remote method, said stub retriever code devices enabling said computer to initiate retrieval of

4   said stub when the remote method is invoked.

1   24. A stub retrieval and loading computer program product as defined in claim 21, the remote method

2   invocation system further including a server for processing said remote method in response to a

3   processing request therefor, the server further providing said stub in response to a retrieval request

4   from said stub retriever.

1   25. A stub retrieval and loading computer program product as defined in claim 24 in which server

2   provides a separate address space for processing said remote method from an address space provided

3   by said execution environment.

1   26. A stub retrieval and loading computer program product as defined in claim 25 in which the

2   address space provided by said server and the address space provided by said execution environment

3   are provided by separate computers.

27. A stub retrieval and loading computer program product as defined in claim 24, further comprising
2   remote server identifier code devices for enabling said computer to provide a server identification for
3   identifying said server.

28. A stub retrieval and loading computer program product as defined in claim 27 further including
2   remote method reference detector code devices for enabling said computer to detect whether a
3   remote method reference has been received in said execution environment, the remote method
4   reference including a remote method server identifier, the remote server identifier code devices
5   enabling said computer to use the remote method server identifier as the server identification.

29. A stub retrieval and loading computer program product as defined in claim 27 further including
2   remote method invocation control code devices for enabling said computer to provide a remote
3   method invocation identification for controlling invocation of said remote method, the remote method
4   invocation providing a remote method server identifier, the remote server identifier code devices
5   enabling said computer to use the remote method server identifier as the server identification.

30. A stub retrieval and loading computer program product as defined in claim 27, the remote method
2   invocation system further including a nameserver for providing a said server identification, said
3   remote server identifier code devices enabling said computer to initiate communication with said
4   nameserver to obtain the server identification for said remote method.

31. For use in connection with a remote method invocation system, a stub retrieval and loading
2   subsystem for controlling the retrieval and loading of a stub for a remote method into an execution

3   environment to facilitate invocation of the remote method by a program executing in said execution

4   environment, the stub retrieval subsystem comprising:

5   A.   a computer; and

6   B.   a control arrangement for controlling said computer, said control arrangement comprising:

7   i.   a stub retrieval module for controlling said computer to initiate a retrieval of said stub;

8   and

9   ii.   a stub loader module for controlling said computer to, when said stub is received in

10   response to said stub retrieval module, load said stub into said execution environment,

11   thereby to make the stub available for use in remote invocation of said remote

12   method.

1   32. A control arrangement for use in connection with a computer to control the retrieval and loading

2   of a stub for a remote method into an execution environment to facilitate invocation of the remote

3   method by a program executing in said execution environment, said control arrangement comprising:

4   i.   a stub retrieval module for controlling said computer to initiate a retrieval of said stub; and

5   ii.   a stub loader module for controlling said computer to, when said stub is received in response

6   to said stub retrieval module, load said stub into said execution environment, thereby to make

7   the stub available for use in remote invocation of said remote method.

1   33. A system for distributing code stored on a computer readable medium and executable by a

2   computer, the code including a plurality of modules each configured to control the computer to

3   facilitate the retrieval and loading of a stub for a remote method into an execution environment to

4   facilitate invocation of the remote method by a program executing in said execution environment, said

5   system comprising:

6   i.   a stub retrieval module for controlling said computer to initiate a retrieval of said stub; and

7   ii.   a stub loader module for controlling said computer to, when said stub is received in response

8   to said stub retrieval module, load said stub into said execution environment, thereby to make

9   the stub available for use in remote invocation of said remote method.